MODELS

Fibre Channel SAN Switch 8-EL
176219-B21
253723-001, Fibre Channel SAN Switch 8-EL - Bundle

What is Storage Services Bundling?

The Storage Services Bundling takes the existing storage products along with the existing services and creates bundles of storage hardware/software and appropriate services. The increased level of support provides for a higher level of storage system availability for the customer.

KEY FEATURES

Entry Level Storage Area Network (SAN) switch fabric for Compaq Modular Array 8000, Enterprise Modular Array 12000, Enterprise Modular Array 16000, Enterprise Virtual Array, and MSA1000 storage systems and Compaq's Enterprise Backup Solution

The Fibre Channel SAN Switch 8-EL delivers the same robust functionality found in Compaq's 8-port SAN switch in a new, cost reduced, entry- level package. Featuring seven fixed media, short-wave, optical transceivers and one removable GBIC-based port in a sealed 1U high chassis, the Fibre Channel SAN Switch 8-EL is an excellent choice for connecting edge devices to a larger SAN fabric or for constructing low cost full fabric SANs. In its base configuration, any one port can be configured as a switch to switch (E-port) connection for seamlessly integrating with other Fibre Channel SAN switches. Multiple switch to switch (E-port) connections can be enabled on the SAN Switch 8-EL with the addition of the Multiple E-port Connectivity Option.

Except for the *QuickLoop*™ for HP-UX software and single E-port connectivity, each Fibre Channel SAN Switch 8-EL ships with the same value-added software bundle and functionality that are included with every Fibre Channel SAN Switch 8 or SAN Switch 16 which consists of:

• Fabric Operating System software

• Web-Based Management Tools

• Zoning software

• *StorageWorks*™ Command Console by Compaq

Other standard features of the SAN Switch 8-EL include:

• Eight 1 Gb/s non-blocking Fibre Channel ports for high data throughput. Seven of these ports contain integrated, non-removable, short-wave optical transceivers that support distances up to 500 meters. One port is configured to accept an optional, removable GBIC (Gigabit Interface Converter) transceiver.

• 10-km link distance support for switch-to-switch connections via use of optional long-wave GBIC.

• Dynamic path rerouting in the event of a link failure.

Differences between Fibre Channel SAN Switch 8 and Fibre Channel SAN Switch 8-EL are:

• Any or all of the 8 ports on a Fibre Channel SAN Switch 8 can be used for switch to switch connections (E-Ports) for cascading switches. Only one of the 8 ports on the Fibre Channel SAN Switch 8-EL is enabled for switch to switch (E-Port) connectivity. All 8 ports of the SAN Switch 8-EL can be enabled as E-ports with the Multiple E-port Connectivity software option.

• The Fibre Channel SAN Switch 8 includes QuickLoop for HP-UX software for connecting HP-UX servers to a SAN switch through FCAL emulation. The Fibre Channel SAN Switch 8-EL software bundle does not include QuickLoop for HP-UX software.

• The Fibre Channel SAN Switch 8 has eight removable GBIC based transceiver ports. GBIC's are ordered separately and support either 500 meter (short wave) or 10 kilometer (long wave) distances. The Fibre Channel SAN Switch 8-EL has seven integrated short wave optical transceivers that are non-removable and one GBIC based port that can accept either a long wave or short wave removable GBIC. A long wave or short wave removable GBIC is ordered separately.

• The Fibre Channel SAN Switch 8 has a modular chassis design with hot pluggable fans and power supply, an optional second power supply, an on-off power switch, and a field replaceable system board. The Fibre Channel SAN Switch 8-EL has a sealed chassis design with 3 fixed fans (any one fan can fail and the switch will continue to operate indefinitely), a single power supply, no on-off power switch and no field replaceable components.

The Fibre Channel SAN Switch 8-EL supports all the same operating systems (except for HP-UX) and storage system connectivity as the SAN Switch 8 and SAN switch 16 products and is 100 percent compatible with them.

COMPAQ

KEY FEATURES *(continued)*

Configuration versatility

- "Universal Ports" self-configure to the type of device that is connected to them. They automatically detect a fabric attached device (F port), an FCAL attached device (FL port), or another Compaq *StorageWorks* Fibre Channel SAN Switch (E port).

- Unique translative addressing allows private loop devices to be addressed by fabric attached devices.

Port configuration flexibility

- Seven Integrated fixed short-wave optical transceiver ports support distances of up to 500 meters between server and switch, and between storage system and switch, using multi-mode fiber optic cable.

- One removable GBIC port supports either short-wave or long-wave GBIC-based transceivers. Long-wave GBICs support distances up to 10 km between switches using single-mode fiber optic cable.

- Either port type can be used for switch to switch (E-port) connectivity.

Zoning functionality enables creations of multiple "logical" SANs within a switch fabric

- Zone members only see other members of the zone.

- Devices may belong to more than one zone.

- Zones may be configured dynamically.

- Hardware and software zoning implementation increases security.

Easy switch management

Administrative functions take place from an existing LAN-based system or locally within the SAN itself. Supported management methods include:

- SNMP (Simple Network Management Protocol)

- Telnet

- Web-Based Management Tools launched via *StorageWorks* Command Console

- Serial port for setting initial IP address, and resetting switch to factory parameters

Disaster resilience and Scalability

- Two switches can be interconnected and separated from each other by up to 10 km with base system E-Port connection.

- Multiple switches can be interconnected with optional Multiple E-Port Connectivity software.

All Fibre Channel SAN Switches are qualified for use with MA8000, EMA12000, EMA16000, MSA1000, Enterprise Virtual Array storage systems

Please refer to the SAN Design Guide for configuration details

KEY FEATURES *(continued)*

Options

207104-B21: Multiple E-port Connectivity software option

167365-B21: Rack mount kit for 8- and 16-port SAN Switches

380561-B21: Short-Wave (500 meter) removable GBIC (single)

340412-B21: Long-Wave (10 km) removable GBIC (pair)

Warranty

Three year total; one-year on-site service, next business day response

Note: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details.

SERVICE & SUPPORT, *CAREPAQ*™ AND WARRANTY INFORMATION

Software Product Services

- Standalone telephone support

- Rights to new license version

- Media and documentation updates

Hardware Product Services

- Installation services

- On-site maintenance (includes warranty support)

- Response time upgrades during the warranty period

- Post-warranty coverage

- RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information, please refer to the URLs listed below:
http://www.compaq.com/services/carepaq/us/install/
http://www.compaq.com/services/carepaq/us/hardware/

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4 hours

- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days

- Duration - Select duration of coverage for a period of 1, 3, or 5 years

Note: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details.

SERVICE & SUPPORT, CAREPAQ AND WARRANTY INFORMATION *(continued)*

CarePaq Information

Sample part numbers:

- FM-**XHW-36, 3 year, uplift to 5 x 9, Next Day Response

- FM-**4HR-36, 3 year, uplift to 5 x 9, 4-hour Response

- FM-**724-36, 3 year, uplift to 7 x 24, 4-hour Response

** represents a two digit product specific code

- CarePaq is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.

- CarePaq is not available for less than the product's warranty duration.

- CarePaq is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.

- CarePaq services are prepaid.

For additional CarePaq (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

http://www.compaq.com/services/carepaq/index.html

Components

The following brick level options/components do not have individual CarePaqs. These items will be included in product CarePaqs into which they are installed.
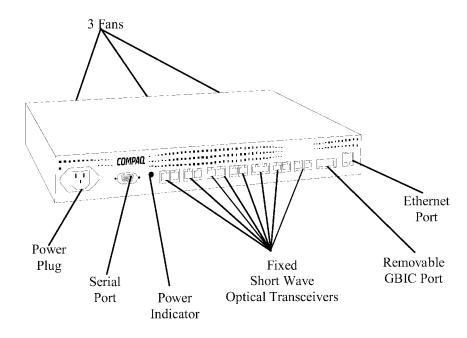
Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans

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TECHNICAL SPECIFICATIONS

3 Fans

Power
Plug

Serial
Port

Power
Indicator

Fixed
Short Wave
Optical Transceivers

Ethernet
Port

Removable
GBIC Port

Fibre Channel San Switch 8-El

Features	Description
Number of Fibre Channel ports	8 Universal Ports
	7 integrated non-removable short wave
	1 optional removable GBIC
Fibre Channel port speed	1.0625 Gb/s
Operation modes	Fibre Channel Class 2 and 3 connectionless service
Aggregate bandwidth	8 Gb/s
Latency	<2 μsec with no contention
Data traffic types	Unicast, multicast, and broadcast
Mechanical Specifications	1U, 19-in (EIA compliant)
	H: 1.71 in/4.34 cm
	W: 16.87 in/42.86 cm
	D: 10 in/25.4 cm
	Weight: 10 lb/4.54 kg
Supported power range	100 to 240 VAC nominal, 47 to 63 Hz
Diagnostics	Embedded online and offline diagnostics

SWITCH MANAGEMENT SPECIFICATIONS

Fabric services	Simple Name Server, Registered State Change Notification (RSCN), Alias Server (Multicast), Zoning
Management access	Telnet, SNMP, SWCC WEB Based Management Tools
Management interfaces	Ethernet (RJ-45, 10/100 Base TX UTP), Serial port, In-band Fibre Channel link

ENVIRONMENTAL SPECIFICATIONS

Features	Operating Range
Temperature	50° to 104° F/10° to 40° C
Humidity	5% to 85% non-condensing @ 104° F/40° C
Altitude	0 to 9,842.5 ft/0 to 3 kilometers above sea level
Shock	4g, 11 ms duration, half sine
Vibration	0 to 3KHz

REGULATORY SPECIFICATIONS

Safety	UL Standard 1950, 3rd Edition
EMI	FCC Rules & Regulations, Part 15B, Class A level
	CISPR22 Class A
	EN55022 Class A
	VCCI Class A ITE
	AS/NZS 3548 Class A
Immunity	IEC 801-2 (IE: IEC 1000-4-2), Severity Level 3 for ESD
	IEC 801-3 (IE: IEC 1000-4-3), Severity Level 3 for Radiated Fields
	IEC 801-4 (IE: IEC 1000-4-4), Severity Level 3 for Fast Transients
	IEC 801-5 (IE: IEC 1000-4-5), Severity Level 3 for Surge Voltage
	IEC 801-6 (IE: IEC 1000-4-6), Conducted Emissions